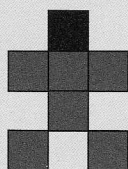


Terrific Tiles

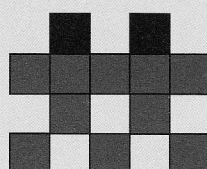
You need ☒ pattern blocks (optional)

Activity

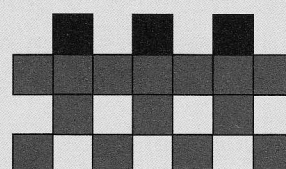
1.



1 person
7 tiles



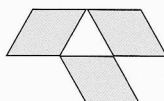
2 people
12 tiles



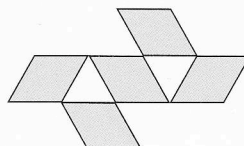
3 people
17 tiles

How many tiles would you need to make the pattern with 10 people?

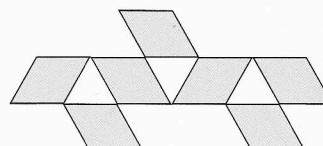
2.



1 triangle
3 rhombuses



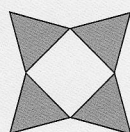
2 triangles
5 rhombuses



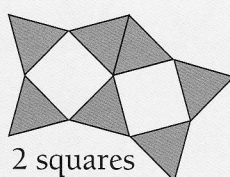
3 triangles
7 rhombuses

How many rhombuses would you need to make the pattern with 10 triangles in it?

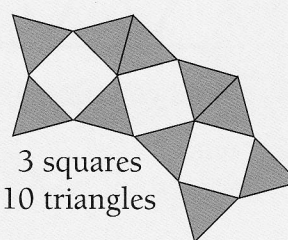
3.



1 square
4 triangles



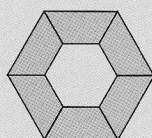
2 squares
7 triangles



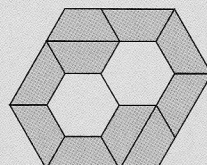
3 squares
10 triangles

How many triangles would you need to make the pattern with 10 squares in it?

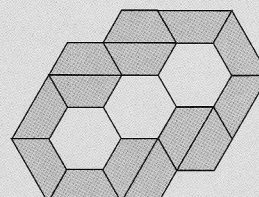
4.



1 hexagon
6 trapezia



2 hexagons
10 trapezia



3 hexagons
14 trapezia

How many trapezia would you need to surround 10 hexagons that are linked together in this way?

Sticking Around

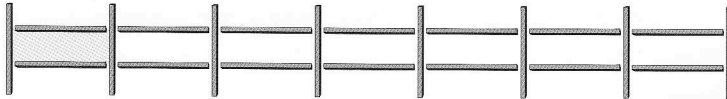
You need ☒ sticks

☒ a classmate

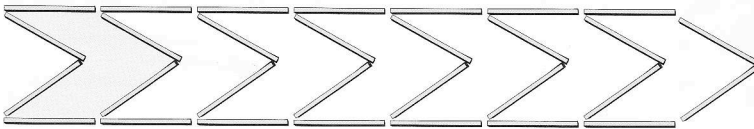
Activity One

1. With a classmate, find some quick ways to count the number of sticks in the patterns shown below. For each pattern, explain the rule you used.

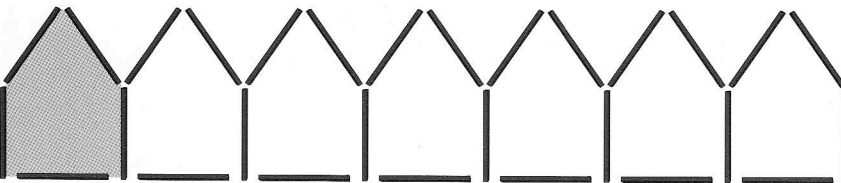
- a. Seven sections of fence:



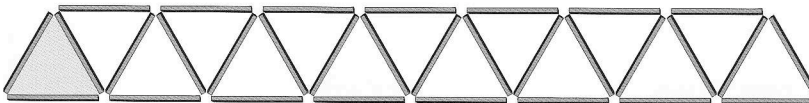
- b. Seven arrows:



- c. Seven houses:



- d. 15 triangles:



2. How many sticks would you need to make:

- a. 15 sections of fence? b. 15 arrows?
c. 20 houses? d. 20 triangles?

Activity Two

Make some stick patterns of your own. Work out a quick-counting method and then ask a classmate to work out their own quick-counting method. Compare your methods.

Tukutuku Patterns

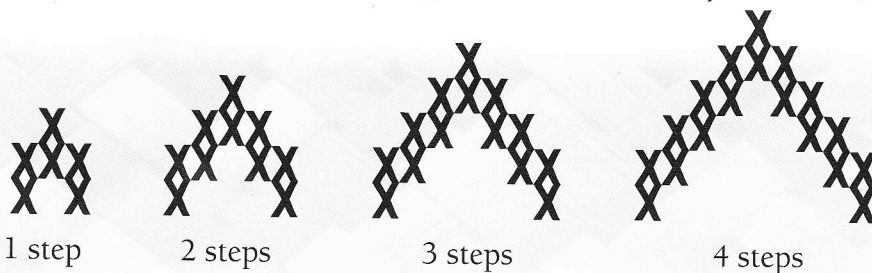
You need ☒ square dot paper

Activity

The wharenui on a marae is named after an important ancestor of the tangata whenua. Carvings and designs tell the story of that ancestor.

Tukutuku can be made of flax strips that are stitched or woven through holes in wooden panels.

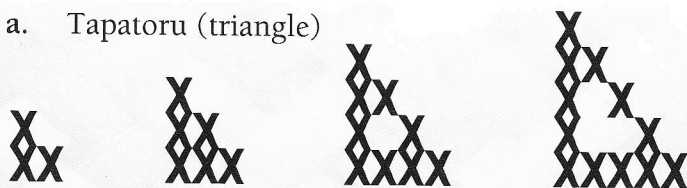
1. The pattern below is known as poutama (the stairway to heaven):



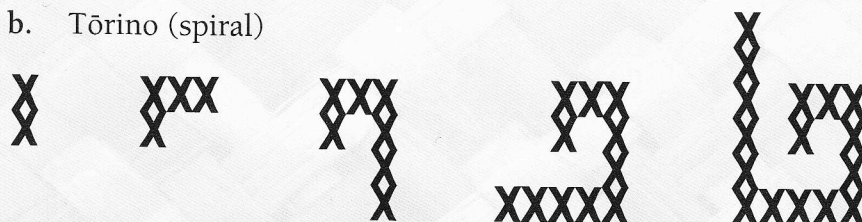
- Find some quick ways to count the number of crosses in each step.
- Draw the next step in the pattern.
- How many crosses would the 10-step stairway have?

2. Below are some other tukutuku designs. How many crosses would be in the tenth step in each pattern

- a. Tapatoru (triangle)



- b. Tōrino (spiral)



- c. Rīpeka (cross)

